Remarks

The Examiner rejected claims 33-37, 39 and 42-44 under 35 U.S.C. 102(b) as allegedly being anticipated by Gallagher et al. (U.S. P. 5,650,958)

The Examiner rejected claims 45 -52 under 35 U.S.C. 103(a) as allegedly being unpatentable over Gallagher et al.(U.S. P. 5,650,958) in view of Ruigrok et al. (WO 99/22368).

Applicant respectfully traverses the §102 and §103 rejections with the following arguments.

35 U.S.C. 102(b)

The Examiner rejected claims 33-37, 39 and 42-44 under 35 U.S.C. 102(b) as allegedly being anticipated by Gallagher et al. (U.S. P. 5,650,958). The Examiner alleges: "With respect to claim 33, Gallagher et al. show (see cover figure and column 3, line 55 et seq.) a MTJ with a first electrode 10, an insulating layer 20 and a second electrode 30. The second electrode is formed by etching (see Figure 8A and column 9, line 30) and the intermediate stage of the etching will provide the upper layer with a central portion and a peripheral portion surrounding the central portion with the peripheral portion being thinner than the central portion. Layer 16 pins layer 18 (column 4, line 20)."

In response, Applicant respectfully contends that Gallagher does not anticipate claim 33, because Gallagher does not teach each and every feature of claim 33.

As a first example of why Gallagher does not teach each and every feature of claim 33,Gallagher does not teach a first feature of: "wherein the thickness of the peripheral portion is less than the thickness of the central portion". The Examiner alleges that in FIG. 8A of Gallagher, the portion of layer 32 that is etched away is the "central portion" of the basic layer of the layer structure of claim 33, and the unetched portion of layer 32 is the "peripheral portion" of the basic layer of the layer structure of claim 33. For clarification, see FIG. 8B of Gallagher showing the layer structure after the etching has been performed. However, it is clear from FIG. 8A of Gallagher that layer 32 has a uniform thickness throughout, so that its central portion and peripheral portion have the same thickness. Thus, Gallagher does not teach said first feature of claim 33.

As a second example of why Gallagher does not teach each and every feature of claim 33,Gallagher does not teach a second feature of: "wherein the layer structure effectuates a magnetic pinning of the basic layer". The Examiner alleges that layer 16 pins layer 18. In response, Applicant notes that layers 16 and 18 are within the first electrode 10, whereas claim

33 requires the magnetically pinned layer to be within the second electrode. Thus, Gallagher does not teach said second feature of claim 33.

Based on the preceding arguments, Applicant respectfully maintains that Gallagher does not anticipate claim 33, and that claim 33 is in condition for allowance. Since claims 34-37, 39, and 42-44 depend from claim 33, Applicant contends that claims 34-37, 39, and 42-44 are likewise in condition for allowance.

35 U.S.C. 103(a)

The Examiner rejected claims 45 -52 under 35 U.S.C. 103(a) as allegedly being unpatentable over Gallagher et al. (U.S. P. 5,650,958) in view of Ruigrok et al. (WO 99/22368). The Examiner alleges: "With respect to claim 45, Gallagher et al. show a basic sensor but do not show a complete device. Ruigrok et al. show a field sensor with a yoke to couple the device to the field. It would have been obvious to include the yoke shown by Ruigrok et al. in the Gallagher et al. device to provide functionality."

In response, Applicant respectfully contends that claim 45 is not unpatentable over Gallagher in view of Ruigrok, because does not teach or suggest each and every feature of claim 20. For example, Gallagher in view of Ruigrok does not teach or suggest "wherein the mass of the non-magnetic element is less than the mass of a metallic element of the at least one magnetic material". Applicant maintains that Gallagher does not disclose sufficient information from which the relative masses of the non-magnetic element and the metallic element of the at least one magnetic material may be inferred.

In addition, the Examiner has not provided any argument to support a position that Gallagher in view of Ruigrok teaches the preceding feature of claim 45. Thus, Applicant respectfully contends that the Examiner has not established a *prima facie* case of obviousness in relation to claim 45.

Additionally, the Examiner has not provided a persuasive reason to modify Gallagher with Ruigrok's disclosed magnetic yoke. The Examiner's stated reason of "to provide functionality" is ambiguous and hence non-persuasive.

Also, Applicants respectfully contends that there is no enablement for modifying Gallagher with Ruigrok's disclosed magnetic yoke. In particular, there is no place in Gallagher's sensor to locate Ruigrok's disclosed magnetic yoke in magnetic contact with the first electrode

layer 10, since the first electrode layer 10 is bounded on one side by the insulator 20 and on an opposing side by the substrate 9.

Based on the preceding arguments, Applicant respectfully maintains that claim 45 is not unpatentable under 35 U.S.C. 103(a), and that claim 45 is in condition for allowance. Since claims 46-52 depend from claim 45, Applicant contends that claims 46-52 are likewise in condition for allowance.

CONCLUSION

Based on the preceding arguments, Applicant respectfully believes that the pending claims meet the acceptance criteria for allowance and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicant invites the Examiner to contact Applicant's representative at the telephone number listed below.

Date: 10/07/2003

Jack P. Friedman
Registration No. 44,688

Schmeiser, Olsen & Watts
3 Lear Jet Lane, Suite 201
Latham, New York 12110
(518) 220-1850